



## GEOL 308.3 – Zortman, Montana, USA

### Geological Mapping I

### End of August 2023 (Exact Dates to follow)

**Application deadline: February 1, 2023**

#### Overview

"Nestled in the heart of the Little Rocky Mountains, Montana, is the old gold mining community of Zortman. About 50 million years ago an igneous intrusion of partially molten rock pushed the overlying metamorphic and sedimentary rocks upwards, exposing them at surface. This intrusion happened to be gold-bearing, and gold was first discovered in the late 1800s in the area. Mining commenced and continued sporadically until the mid 1990s, when the mine was closed. The exposure of such a wide variety of rock types makes the Zortman area a fantastic location to teach students the skill of Geological mapping. We have been taking students to the Little Rocky Mountains since 1953!"

#### Course Description

"Geological mapping is a fundamental skill required by all geologists. It is essential to see rocks in their field context and learn basic geological mapping techniques. The Little Rocky Mountains of Montana are a splendid geological locale: in the Tertiary Period a gold-bearing intrusion pushed its way through the Precambrian basement and Phanerozoic cover rocks, creating an unparalleled exposure of the Great Plains stratigraphy. At the foot of the mountains on the eastern side is the old gold-mining village of Zortman, out of which we will pursue our geological investigations into the Little Rocky Mountains

#### Learning Outcomes

By the completion of this course, students will be expected to:

1. Identify, describe, measure and interpret rocks in the field in order to construct a geological map and prepare geological cross-sections.
2. Apply stratigraphic and paleontologic principles to the paleoenvironmental interpretation of sedimentary rocks.
3. Identify and interpret local and regional geological structures.
4. Write a technical report that succinctly and effectively communicates the findings of your fieldwork.
5. Gain knowledge of the regional historical geology of central North America.

#### Prerequisites:

GEOL 226.3 (and by implication GEOL 224.3), GEOL 247.3 (and by implication GEOL 245.3) and GEOL 258.3, along with permission of the Department. Your prerequisites must be successfully completed by the end of April 2023.

#### Note:

This course is a physically demanding class and students must be able to walk long distances over long periods of time. If you have a disability, **please contact AES as early as possible** to discuss your accommodation needs while abroad.

### Faculty Coordinators:

Dr. Colin Sproat  
[colin.sproat@usask.ca](mailto:colin.sproat@usask.ca)

### How to Apply:

Application forms are available online from the Study Abroad Website:  
<http://students.usask.ca/academics/goabroad/taught-abroad-programs.php>

### For more information and to submit applications, contact:

LaVina Watts, Program Manager, ARTS 119.5, 306-966-4194.  
[AandS.Abroad@usask.ca](mailto:AandS.Abroad@usask.ca)

### Cost to Student:

- **UofS tuition:** approx. **\$753** (individual registration and payment)
- **Program fee:** approx. **\$1400**, which includes:
  - includes accommodation; entrance fees to sites, on-site transportation (does NOT include tuition)
- **Other costs:** individual meals, personal expenses (gifts, souvenirs), textbooks or other course materials, personal on-site transportation, possible medical insurance; etc.

### Financial Assistance:

All students accepted to participate in the program will receive the **\$1000 Global Engagement Scholarship** to help offset costs related to studying abroad (must be taking the course for credit to be eligible).

UofS students may be eligible for other travel funding. For further information please visit:

<http://artsandscience.usask.ca/undergraduate/scholarships.php>  
<https://students.usask.ca/academics/goabroad/awards.php>

### Arts and Science Study Abroad Awards and Scholarships Students Can Apply for if Eligible.

Name of Award	Value	Selection Criteria
<a href="#">Gail Appel Study Abroad Award</a>	\$1,000 - \$2,500	Based on academic achievement and financial need
<a href="#">James Barney Smythe International Travel Scholarship</a>	\$1,000	Based on academic achievement and financial need
<a href="#">McEwan Student Travel Scholarship</a>	\$2,500	Based on academic achievement and financial need
<a href="#">That Ngo Fund for Study Abroad</a>	\$1,000	Based on academic achievement and financial need

### Payment Schedule:

A \$500 non-refundable deposit will be due upon acceptance into the program (in March).  
The remainder of the program fee is due in mid-April 2023 (details will be specified in the acceptance letter).  
Program fee payments will be made Online through a link provided after acceptance to program.